

Amendment to the Claims:

This listing of claims 1-18 will replace all prior versions and listing of claims in the application. Claims 3 and 12 are amended.

Listing of Claims

1. (Previously Presented) A memory device comprising:
an array of bit cells for storing data bits in a corresponding array of bit locations, the array of bit cells constituting an information plane wherein each of said bit locations includes an electromagnetic material, wherein a magnetic state of said electromagnetic material at said bit locations represents the logical value thereof, and
an array of electro-magnetic sensor elements that are aligned with the bit locations,
wherein the information plane comprising said array of bit cells is programmable or programmed via a magnetic field induced via a separate magnetic writing device.
2. (Previously Presented) A device as claimed in claim 1, wherein the array of electromagnetic sensor elements comprise read-only magnetic sensor elements that are sensitive to, but unable to change, said magnetic state of the electromagnetic material.
3. (Currently Amended) A device as claimed in claim 1, wherein the device further comprising a housing for encapsulating the array of electromagnetic sensor elements, which housing has an interface surface for cooperating with a programming surface of the writing device for receiving said magnetic field for magnetizing the electromagnetic material at the bit locations.
4. (Previously Presented) A device as claimed in claim 1, wherein the device further comprising a housing for encapsulating the array of electromagnetic sensor elements, which housing has a protective cover for preventing selectively changing said

magnetic state at the bit locations via said magnetic field.

5. (Previously Presented) A device as claimed in claim 4, wherein the protective cover comprises a magnetic shielding material.

6. (Previously Presented) A device as claimed in claims 1, wherein the electromagnetic sensor elements comprise read-write elements that are aligned with further bit locations of said information plane, which read-write elements are sensitive to, and also able to change, said magnetic state of the electro-magnetic material.

7. (Previously Presented) A device as claimed in claim 6, wherein the read-only sensor elements and the read-write elements are arranged in a single array.

8. (Previously Presented) A writing device for programming a memory device as claimed in claim 1, wherein the writing device comprises:

a programming surface for cooperating with the information plane of the memory device, and

means for generating a magnetic field via controllable radiation beams at the programming surface for magnetizing the electromagnetic material at each bit location of the array of bit locations of the information plane.

9. (Previously Presented) A writing device as claimed in claim 8, wherein the programming surface is arranged for cooperating with interface surface of a housing of the memory device.

10. (Previously Presented) A writing device as claimed in claim 8, wherein the means for generating a magnetic field comprise at least one of: an array of individually controllable write elements an array of permanent magnetic elements; a magnetic head; scanning means for scanning the information plane at the programming

surface via a magnetic head.

11. (Previously Presented) A method of manufacturing a memory device, the method comprising:

- (a) constructing an information plane comprised of an array of bit cells

at predefined bit locations, wherein each bit cell is programmable or programmed via a magnetic field induced via a separate magnetic writing device;

- (b) providing a predetermined amount of magnetic material at each bit cell;

- (c) constructing an array of electro-magnetic sensor elements that are aligned with the bit locations of the array of bit cells,

- (d) programming the information plane via a separate writing device via magnetization of the electromagnetic material at the bit locations of the information plane; and

- (e) providing the memory device in a housing, said housing providing a protective cover for preventing selectively changing said magnetic state at the bit locations via said magnetic field.

12. (Currently Amended) A method of programming a memory device using an external writing device, the method comprising:

- (a) aligning a programming surface of an external writing device ~~said memory device~~ over an information plane of said memory device to be programmed to achieve a one to one alignment of bit locations of the information plane and field generator elements of said external writing device; and

- (b) generating, via the field generator elements, a magnetic field at the bit locations to magnetize the electromagnetic material at the bit locations of the memory device according to predefined data.

13. (Previously Presented) A device as claimed in claim 1, wherein said device is fully M-RAM compatible.

14. (Previously Presented) A method of programming a memory device as claimed in claim 12, wherein said alignment is performed via one of: active alignment utilizing one or more actuators, optical sensing via optical markers provided on said memory device.

15. (Previously Presented) A method of manufacturing a memory device as claimed in claim 11, wherein the protective cover comprises a magnetic shielding material.

16. (Previously Presented) A method of manufacturing a memory device as claimed in claim 11, wherein the protective cover comprises a magnetic shielding material.

17. (Previously Presented) A method of manufacturing a memory device as claimed in claim 11, wherein the array of electromagnetic sensor elements comprise read-only magnetic sensor elements that are sensitive to, but unable to change, said magnetic state of the electromagnetic material.

18. (Previously Presented) A method of manufacturing a memory device as claimed in claim 1, wherein the electromagnetic sensor elements comprise read-write elements that are aligned with further bit locations of said information plane, which read-write elements are sensitive to, and also able to change, said magnetic state of the electromagnetic material.